



## **TABLE OF CONTENTS**

<b>I. SUMMARY .....</b>	<b>2</b>
<b>II. THE RECORD OF THIS PROCEEDING COMPELS GRANT OF THE PETITION .....</b>	<b>7</b>
<b>A.    ANS' APPROACH IS SUPPORTED BY THE PARTIES TO THIS           PROCEEDING .....</b>	<b>8</b>
<b>B.    ANS' SPECIFIC PROPOSALS ARE SUPPORTED BY THE PARTIES TO           THIS PROCEEDING .....</b>	<b>9</b>
1. <u>Channelization</u> .....	9
2. <u>Co-primary eligibility</u> .....	12
3. <u>Frequency Coordination</u> .....	12
4. <u>Loading</u> .....	13
5. <u>Other Proposals</u> .....	13
<b>C.    SUFFICIENT PUBLIC SUPPORT EXISTS TO GRANT THE PETITION ....</b>	<b>14</b>
<b>III. CONCERNS OVER ANS' PROPOSALS ARE UNJUSTIFIED .....</b>	<b>16</b>
<b>A.    VARIOUS PARTIES MAKE SUGGESTIONS AND RAISE CONCERNS           THAT REQUIRE FURTHER CONSIDERATION IN A FORMAL           RULEMAKING .....</b>	<b>17</b>
<b>B.    CRITICISM OF ANS' PROPOSED 4 GHZ BAND REALLOCATION           IS PREMATURE .....</b>	<b>27</b>
<b>CONCLUSION .....</b>	<b>30</b>
<b>ATTACHMENT 1</b>	
<b>ATTACHMENT 2</b>	

RECEIVED

JUL 17 1992

Before the  
**FEDERAL COMMUNICATIONS COMMISSION**  
Washington, D.C. 20554

FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

In the Matter of )  
 )  
Amendment of Parts 2, 21, 25 and 94 ) RM-8004  
of the Commission's Rules to )  
Accommodate Common Carrier )  
and Private Op-Fixed Microwave )  
Systems in Bands Above 3 GHz )

To: The Commission

**REPLY STATEMENT**

Pursuant to Section 1.415 of the Commission's Rules, 47 C.F.R. Section 1.415 (1991), Alcatel Network Systems, Inc. ("ANS"), by its attorney, hereby replies to the statements made on its above-captioned Petition for Rule Making ("Petition").<sup>1</sup> In its Petition, ANS requests that the Commission amend Parts 2, 21, 25 and 94 of its Rules to accommodate 2 GHz common carrier and private op-fixed microwave systems in the bands above 3 GHz if they are relocated to make room for emerging technologies. Support is strong for grant of the Petition even though there are fundamental differences among the parties regarding the merits of ANS' specific proposals.<sup>2</sup> This support is driven by the need for the public and the Commission to have a meaningful opportunity to evaluate whether removing 2 GHz users to the higher bands is in the public interest.<sup>3</sup>

---

<sup>1</sup> In a Public Notice (DA 92-705, released June 2, 1992), the Commission solicited public comment on the Petition. Reply Statements are due for filing by July 17, 1992.

<sup>2</sup> See Attachment 1 for ANS' detailed response to all the comments filed on its Petition.

<sup>3</sup> The need for careful attention to the needs of potentially displaced 2 GHz users became even more acute today because of the Commission's decision to issue a Notice of Proposed Rulemaking for the establishment of personal communications services ("PCS") (ET Docket No. 92-100). Under this proposal, broadband PCS would be authorized in the 2 GHz band contingent upon completion of the proposed emerging technologies reallocation. In taking this action, the Commission "reiterated its desire not to harm the

## **I. SUMMARY**

**ANS filed this Petition in response to the Commission's Notice of Proposed Rule Making, 7 FCC Rcd 1542 (ET Docket No. 92-9) (1992) ("NPRM"). In the NPRM, the Commission proposes reallocating 220 MHz of spectrum between 1.85 and 2.20 GHz for emerging telecommunications technologies. A phased-in migration of existing and prospective common carrier and private op-fixed 2 GHz microwave users to bands above 3 GHz would be implemented to make room for these new technologies.**

**To accommodate the potentially displaced 2 GHz users, the Commission proposes that they operate in bands above 3 GHz. Such operation would be implemented under a "blanket" waiver of eligibility requirements. Pursuant to this "blanket" waiver, displaced 2 GHz users could provide service under the currently applicable technical rules and coordination procedures for the higher bands.<sup>4</sup>**

**ANS disagrees with this approach. Operation by displaced common carrier and private op-fixed users in the bands above 3 GHz, of necessity, would involve material differences in channelization and loading requirements, path length and propagation characteristics, and reliability standards. Offering displaced users the "fig leaf" of a "blanket" waiver simply will not work. Most parties commenting on the Petition and on the NPRM concur.**

**[T]he Commission's proposed migration plan...does not specify how that sharing would be accomplished, that is, it does not include the technical rules needed to make this transition**

---

**quality of service which can be offered by incumbents now in the 2 GHz band, and asked for general comments on a proposal by incumbents to accommodate possible negotiations with new users." News Release (released July 16, 1992). Prompt action to grant the Petition thus is necessary before the 2 GHz reallocation becomes a fait accompli.**

<sup>4</sup> **NPRM, 7 FCC Rcd at 1545.**

**workable (e.g., coordination procedures, channelization plans, and standards governing minimum channel loading, path length, frequency modulation efficiency, and antenna design).<sup>5</sup>**

**Instead of the "blanket" waiver, specific rules must be adopted governing how potentially uprooted 2 GHz users would operate in the higher bands. Otherwise, essential services will be disrupted and the public will suffer.**

**Attempting the 2 GHz relocation without a comprehensive plan could severely disrupt the entire point-to-point microwave spectrum, creating operational problems and financial hardships for system operators and reducing the effectiveness of point to point microwave as a viable communications medium.<sup>6</sup>**

**As a threshold, these rules must ensure that the 2 GHz common carrier and private op-fixed microwave users' low and medium capacity systems would be compatible with current operations when they are relocated to the primarily high capacity bands above 3 GHz. In particular, such rules must prescribe requirements for co-primary use of all available bands by private op-fixed and common carriers, eligibility, band channelization, modulation efficiency standards and minimum channel loading, minimum path lengths, frequency coordination criteria, and antenna standards.**

**Adoption of these or similar rules is essential to implementing the Commission's proposed 2 GHz reallocation.**

**[T]he effort to provide suitable replacement spectrum, with appropriate channelization, for displaced users represents an especially urgent and compelling need. Accordingly, ... the**

---

<sup>5</sup> Comments of Harris Corporation--Farinon Division ("Harris") at 2 (footnote omitted). See also Comments of the Association of American Railroads ("AAR") at 2 ("the incompatibility of the higher bands for use in private fixed microwave operations" will result in "chaos" if "the Commission follows its present course").

<sup>6</sup> Comments of the Telecommunications Industry Association Fixed Point to Point Communications Section ("TIA") at 5.

**measures proposed by ANS should be elevated to a priority commensurate with that assigned to the emerging technologies proceeding.<sup>7</sup>**

**Until such rules are adopted, the Commission cannot require removal of fixed microwave users from the 2 GHz band.**

**Certain existing 2 GHz operations cannot practically and efficiently be accommodated in the higher frequency microwave bands as they are currently configured. Problem areas include incompatible channelization plans, loading standards and path length requirements. Before any relocation of existing 2 GHz users can occur, the operational rules for these bands must be revised to satisfy the spectrum needs of existing 2 GHz licensees.<sup>8</sup>**

**Thus, based upon the record of this proceeding and upon the record of the NPRM, the Commission is obligated to proceed with a formal rule making regarding operation by displaced 2 GHz users on the higher bands.<sup>9</sup>**

**ANS, in its Petition, proposes these necessary rules to ensure the continued availability of critical fixed microwave services and to optimize spectral efficiency:**

**1. Reallocation of the 3.6-3.7 GHz band, currently allocated on a shared basis to government use (aeronautical radionavigation and radiolocation on a primary basis) and to non-government use (fixed satellite downlink on a primary basis and radiolocation on a**

---

<sup>7</sup> Statement in Support by the American Petroleum Institute ("API") at 4-5.

<sup>8</sup> Comments of Centel Corporation ("Centel") at 3-4 (footnote omitted). See also API at 8 ("[I]t is imperative that frequency bands below 6 GHz be made available to accommodate the long distance requirements of private operational-fixed microwave licensees").

<sup>9</sup> Comments of Comsearch ("Comsearch") at 2; API at 5; TIA at 2; Centel at 1; Harris at 2; Comments of the Utilities Telecommunications Committee ("UTC") at 1; Comments of Pacific Telesis Group ("Pacific Telesis") at 1-2; Comments of GTE Service Corporation ("GTE") at 2; MCI Comments ("MCI") at 4; AAR at 2-3; Comments of the Large Public Power Council ("LPPC") at 2-3; Comments of Microwave Radio Corporation ("MRC") at 1; Statement of American Personal Communications ("APC") at 1-2; Comments of National Spectrum Managers Association on Petition for Rulemaking ("NSMA") at 1-2.

secondary basis), so that fixed point-to-point non-government service could be provided by common carriers and private op-fixed users on a co-primary basis.

2. Reallocation of the point-to-multipoint section of the 10.55 to 10.68 GHz band to permit point-to-point applications by both private op-fixed and common carriers on a co-primary basis.

3. Reallocation of the following bands to permit use by both private op-fixed and common carriers on a co-primary basis:

- 4 GHz (3.7-4.2 GHz).
- Lower 6 GHz (5.925-6.425 GHz).
- Upper 6 GHz (6.525-6.875 GHz).
- 11 GHz (10.7-11.7 GHz).

4. Specific rule changes to Parts 2, 21, 25 and 94, which would:

- effectuate such proposed reallocations;
- define eligibility;
- prescribe band channelization, minimum path lengths, minimum channel loading, and minimum capacity for bandwidth used;
- establish frequency coordination criteria; and
- establish antenna standards.

As demonstrated in the Petition, adoption of these rules would serve the public interest. First, proper evaluation of the Commission's proposed 2 GHz band allocation is possible only if the feasibility of operation in the higher bands for displaced 2 GHz users is fully explored. Second, increased certainty over their future operation in the bands above 3 GHz would promote 2 GHz users' support for the proposed migration. Third, across-the-board sharing of the 3.6 to 3.7, 4, lower 6, upper 6, 10 and 11 GHz bands by common carrier and by private op-fixed microwave users on a co-primary-basis would provide both classes of users access to more spectrum than they have now. Fourth, the 2 GHz users' expressed need for low and medium capacity channels in the high capacity bands above

3 GHz would be satisfied. Fifth, incumbent users in the bands above 3 GHz only would be required to make limited reasonable and equal sacrifices on a long-term, minimally disruptive basis. Sixth, the proposed reallocations would be compatible with international conventions and requirements. Nothing in the record of this proceeding or in the record of the NPRM proves the contrary.

ANS' proposal received broad-based support from common carriers, private op-fixed users, frequency coordinators, equipment manufacturers, and industry standards organizations. As detailed below, the comments on ANS' Petition, with limited exception, support the need for a rule making to

address the technical and coordination rules which would have to be amended to make additional spectrum available for: (1) existing 2 GHz systems that would be displaced by new, emerging technologies, (2) new or modified systems that would have been licensed in the 2 GHz band but for the FCC's new, secondary only licensing policies for the 2 GHz band, and (3) new systems that might not be accommodated in other, higher microwave bands due to the migration of currently - licensed 2 GHz private and common carrier microwave systems.<sup>10</sup>

indeed, the overwhelming sentiment of the parties commenting on the Petition, as well as on the NPRM, is that the Commission should not proceed with the 2 GHz reallocation prior to confirming that displaced users could use the bands above 3 GHz and prior to promulgating rules for such use.

[T]he Commission should promptly issue a notice of proposed rulemaking seeking further comment concerning band sharing, channelization, bandwidth allocations, and technical standards for the higher microwave bands. The views of all interested parties should be taken into account. It is important that these rule changes be made well in advance of any relocation of

---

<sup>10</sup> UTC at 2.



existing microwave facilities which may be required by the Commission in the [NPRM].<sup>11</sup>

## **II. THE RECORD OF THIS PROCEEDING COMPELS GRANT OF THE PETITION**

It is well-settled that the Commission's Rules for the bands above 3 GHz are ill-suited to the needs and operating requirements of 2 GHz users. When it proposed reallocation of the 2 GHz band for emerging technologies, the Commission should have been sensitive to these differences and it should have proposed specific rules for how the 2 GHz user would operate in the higher bands instead of relying on the "blanket waiver" approach. Unfortunately, the Commission is in danger of being blinded by, and the public is in danger of being blind-sided by, this apparent conceit that the 2 GHz users could operate under the "blanket" waiver. This mistake has generated substantial uncertainty among 2 GHz common carrier and private op-fixed users and consequently has created a fire storm of opposition to the proposed reallocation.

To break down these justifiable barriers, the Commission needs to initiate a proceeding to explore what rules are needed to accommodate the 2 GHz users. ANS understands that this is a complex process and that the needs of different classes of 2 GHz users, as well as the needs of incumbent users on the affected bands above 3 GHz, must be considered. Given such complexity, ANS, in its Petition, seeks to initiate this necessary process and establish a framework for full public consideration of the issues specifically related to operation by 2 GHz users on the higher bands.

---

<sup>11</sup> MCI at 8. See also Pacific Telesis at 1; GTE at 2; MRC at 4; UTC at 2.

**A.     ANS' APPROACH IS SUPPORTED BY THE PARTIES TO  
THIS PROCEEDING**

With limited exception, the parties to this proceeding support granting the Petition. Centel, one of the common carriers potentially affected by the NPRM, favors grant of ANS' Petition because it is "an important first step" and because it provides an "appropriate framework for promptly and effectively" addressing the needs of 2 GHz users.<sup>12</sup> Similarly, Harris declares that the "Petition provides a good starting point for the development of the technical rules needed to enable" 2 GHz user migration to bands above 3 GHz.<sup>13</sup> Comsearch, an industry leader in frequency coordination, "applauds ANS's efforts at formulating specific technical and operational rules to facilitate the movement of displaced 2 GHz users."<sup>14</sup> TIA, the major industry association for fixed point-to-point microwave manufacturers, finds that ANS' "suggestions are well founded" and recommends their "rapid implementation."<sup>15</sup> API characterizes the Petition as "well-conceived."<sup>16</sup>

---

<sup>12</sup> Centel at 1, 3-4.

<sup>13</sup> Harris at 14.

<sup>14</sup> Comsearch at 2.

<sup>15</sup> TIA at 2.

<sup>16</sup> API at 11.

**B. ANS' SPECIFIC PROPOSALS ARE SUPPORTED BY THE PARTIES TO THIS PROCEEDING**

In its Petition, ANS proposes a detailed set of rules designed to meet the operating requirements of 2 GHz users on the higher bands. Generally, these rules are supported by the record of this proceeding.<sup>17</sup>

1. Channelization -- Licensees operating on the 2 GHz band have materially different channelization requirements than would be available at the designated higher bands under the "blanket" waiver proposal. Specifically, the high capacity channelization scheme for the bands above 3 GHz must be changed to be consistent with the low and medium capacity needs of the displaced 2 GHz users. Otherwise, the public interest benefits accruing from spectrum efficiency would be lost.

In its Petition, ANS proposes rechannelizing the 4, 6, 10 and 11 GHz bands to correspond with the different capacity requirements of existing and prospective users.<sup>18</sup> This proposed channelization plan is supported by common carriers, private op-fixed users, a prominent frequency coordinator, and a leading industry standards committee.

To ensure the efficient use of the bands designated as replacement spectrum, it is important that the Commission implement measures along the lines suggested by ANS.<sup>19</sup>

---

<sup>17</sup> Even though most parties support the concept of ANS' Petition, certain of these parties also express concern over specific proposals or suggest alternative approaches to accommodating the needs of potentially displaced 2 GHz users. ANS welcomes all these comments and specifically addresses them in Section III, infra, and in Attachment 1.

<sup>18</sup> Petition, Attachment 1 at Section 1.0.

<sup>19</sup> API at 4. See also NSMA at 1 ("careful development of microwave channel plans and their efficient utilization is important").

A common carrier, Centel, lauds ANS for using "its practical knowledge of the existing operations of microwave licensees to develop a set of proposals that reflects real world needs," especially the need to rechannelize the higher bands:

[T]he higher frequency bands currently are channelized for high density uses. To facilitate relocation, a spectrum efficient plan that also accommodates the low and medium capacity uses common in the 2 GHz band -- like those found in many cellular systems -- is essential. Alcatel's proposal offers this flexibility while also preserving a substantial number of high capacity channels.<sup>20</sup>

Private carriers also approve ANS' proposed channelization plan:

API is supportive of ANS's concept for rechannelizing the frequency bands below 11700 MHz to accommodate both low and medium density requirements. [T]he Commission's proposal merely to issue a "blanket waiver" of the bandwidth requirements and other technical specifications does not represent a useful approach. The Commission must aggressively seek to make the most efficient use of the frequency bands under 12 GHz which would remain available for use pursuant to Part 94. API believes that the channelization scheme proposed by ANS offers the potential for improving spectrum efficiency.<sup>21</sup>

Comsearch praises ANS for "show[ing] a sensitivity to displaced users needs through the subdivision and rechannelization of existing frequency plans."<sup>22</sup> TIA states that ANS' proposed channel plan promotes flexibility by affording users the ability to select a

---

<sup>20</sup> Centel at 4.

<sup>21</sup> API at 9. API also concludes that ANS' "proposal both increases the flexibility available to microwave system licensees and provides a useful range of options for selecting the optimum bandwidth for microwave applications." API at 6.

<sup>22</sup> Comsearch at 2. See also Pacific Telesis at 1-2; MCI at 8.

bandwidth that is appropriate and thus it "correctly address[es] the needs of the migrating 2 GHz users."<sup>23</sup>

An integral part of ANS' Petition is the proposed reallocation of the 3.6 to 3.7 GHz band for fixed microwave use. This band is allocated on a shared basis for government use (aeronautical radionavigation and radiolocation on a primary basis) and for non-government use (fixed satellite downlink service on a primary basis and radiolocation service on a secondary basis).

Several parties support this proposal. MCI opines that ANS' "proposal to add the 3.6 - 3.7 GHz band is a move in the right direction."<sup>24</sup> API recommends that the 3.6 - 3.7 GHz band "should be included as one element of the Commission's overall effort to provide meaningful relief for licensees who would otherwise use the 2 GHz band."<sup>25</sup> Harris believes that the 3.6 - 3.7 GHz band "would be potentially useful to the fixed microwave services displaced from the 2 GHz band."<sup>26</sup> More importantly, it is noteworthy that the governmental agency which must concur with any reallocation of the 3.6 - 3.7 GHz band, the National Telecommunications and Information Administration ("NTIA"), which was served a copy of the Petition and which has been active in the NPRM, did not file any objection to ANS' proposal.

---

<sup>23</sup> TIA at 3. TIA also supports ANS' proposal to rechannelize frequency bands from 29.65 MHz to the more commonly used 30 MHz international bandwidth because it "facilitates the reuse of modern technology at various bands with attendant cost savings to the end users" and because "it promotes the Commission's expressed goal of positioning the telecommunications industry to compete internationally." Id. at 2.

<sup>24</sup> MCI at 6.

<sup>25</sup> API at 9.

<sup>26</sup> Harris at 7 n.4.

2. Co-primary eligibility -- ANS proposes that both 2 GHz common carriers and private op-fixed users should be made eligible to operate on all the bands above 3 GHz on a co-primary basis. The reason for proposing elimination of the existing common carrier and private op-fixed partition in these higher bands is that it would increase the capacity available for both user classes without compromising the operating integrity of any user.<sup>27</sup>

TIA supports ANS' proposal for co-primary sharing of the higher bands.

The point is . . . that Part 21 and Part 94 users are operationally and technically similar. With similar needs and technical characteristics, placing them together as co-primary users seems reasonable.<sup>28</sup>

API agrees:

The allocation proposed in ET Docket No. 92-9, if implemented, will place the Commission under intense pressure to find alternative spectrum suitable for accommodating essential point-to-point microwave systems now licensed in the band 1850-2200 MHz. Under such circumstances, the sharing of microwave frequencies between common carrier and private radio services represents an approach which deserves further exploration. API therefore supports this aspect of ANS's Petition.<sup>29</sup>

3. Frequency Coordination -- Co-habitation by common carriers and by private op-fixed users on the higher bands requires comprehensive frequency coordination protocols. ANS proposes such standards in its Petition.<sup>30</sup> TIA and Comsearch each concur with the need for revising existing frequency coordination requirements in the bands

---

<sup>27</sup> Petition, Attachment 1 at Section 4.0.

<sup>28</sup> TIA at 2. See also Comsearch at 2; MRC at 3 ("[p]rivate microwave uses and common carrier microwave uses are operationally similar and administratively compatible").

<sup>29</sup> API at 7 (footnote omitted).

<sup>30</sup> Petition, Attachment 1 at Section 4.8.

above 3 GHz to ensure that common carriers and private op-fixed users can operate successfully on a co-primary basis.<sup>31</sup>

4. Loading -- Different loading requirements exist for the 4 and 6 GHz common carrier bands and for the 6 GHz private op-fixed band. To ensure that these displaced users could operate in such higher bands on a co-primary basis, ANS proposes specific user-oriented, uniform loading requirements for common carrier and private op-fixed users operating in the bands above 3 GHz.<sup>32</sup> TIA supports this proposal.<sup>33</sup>

5. Other Proposals -- ANS, in its Petition, provides the Commission with a full recipe for designing rules that would meet displaced 2 GHz user needs. In addition to the major proposals regarding channelization, co-primary eligibility and frequency coordination, ANS made various other suggested rule changes, supported by parties to this proceeding, necessary to ensure optimal operation by 2 GHz users in the higher bands. These other changes include path length requirements,<sup>34</sup> antenna standards<sup>35</sup> and automatic transmit power control ("ATPC")<sup>36</sup> implementation.

---

<sup>31</sup> TIA at 4; Comsearch at 2.

<sup>32</sup> Petition, Attachment 1 at Section 4.5.

<sup>33</sup> TIA at 3.

<sup>34</sup> Comsearch at 4.

<sup>35</sup> GTE at 12-13; TIA at 4; Comsearch at 4.

<sup>36</sup> TIA at 4; Comsearch at 5; Harris at 12-13.

**C. SUFFICIENT PUBLIC SUPPORT EXISTS TO GRANT THE PETITION**

ANS' Petition did not generate universal support. Nor did it generate substantial opposition. Nevertheless, ANS appreciates the considered evaluations of its specific proposals -- both pro and con -- submitted in this proceeding.

What is abundantly clear from the comments on the Petition and from the comments on the NPRM, however, is that a platform is necessary for the Commission to determine whether displaced 2 GHz users could operate in the higher bands. According to the parties participating in this proceeding, ANS' Petition satisfies this need.

[M]eaningful evaluation of the Commission's emerging technologies proposal requires consideration of the feasibility of relocating 2 GHz users to frequencies above 3 GHz. Such feasibility, however, cannot adequately be assessed until technical and operational rules governing the relocated entities in these higher frequency bands are articulated and adopted.<sup>37</sup>

In considering the merits of the Petition, it is important to focus on ANS' underlying purpose in submitting the proposals for public comment. If the Commission intends to reallocate the 2 GHz band for emerging technologies, it must discard its "blanket" waiver proposal and it must pay careful attention to guaranteeing that the 2 GHz users' operating requirements in the higher bands will be acceptable. Anything less would be arbitrary and capricious.<sup>38</sup>

---

<sup>37</sup> Centel at 3.

<sup>38</sup> Under the Administrative Procedure Act ("APA"), the Commission has the discretion to grant or deny the Petition. 5 USC Section 553(e) (1992); WWHT, Inc. v. F.C.C., 656 F.2d 807, 816-17 (D.C. Cir. 1981). When an agency agrees to conduct a rulemaking, "it evidences its view that the proposals are sufficiently meritorious to warrant further investigation...." Natural Resources Defense Council, Inc. v. S.E.C., 606 F.2d 1031, 1046 (D.C. Cir. 1979). Such discretion, however, is not unlimited. Agency decisions to deny rulemaking petitions are appropriate if, based upon the agency's expertise, the time is not ripe, if rapid technological changes would render the rules obsolete upon adoption, or if inadequate data



ANS, in its Petition, has taken "the initiative to start the process of developing the rules necessary to effect a migration plan, should one become necessary."<sup>39</sup> Expert and wide-ranging input has been stimulated, which is exactly what ANS intends the Petition to accomplish. Those parties participating in this proceeding and in related proceedings<sup>40</sup> all have different agendas and all have contributed valuable and unique viewpoints to the record. Based upon this record, establishing a rulemaking regarding the needs of 2 GHz users is the proper forum for measuring the public interest benefits that could be gained from the emerging technologies reallocation against the potential costs such a reallocation could exact on the public.

---

exist to support the proposed changes. *Id.* None of these elements exist with respect to the Petition. Moreover, in assessing whether to grant the Petition, the Commission has a "duty to consider representative alternatives to its chosen policy and to give a reasoned explanation for its rejection of such alternatives." City of Brookings Municipal Telephone Company v. F.C.C., 822 F.2d 1153, 1169 (D.C. Cir. 1987) (citing Farmers Union Central Exchange, Inc. v. FERC, 734 F.2d 1486, 1511 (D.C. Cir.), cert. denied, 469 U.S. 1034 (1984) (footnote omitted)). Failure by an agency, like the Commission, to consider all elements in promulgating rules breaches its responsibility for exercising its expertise in a reasoned manner. City of Brookings, 822 F.2d at 1169 n.46. Thus, it would be "arbitrary and capricious if the [Commission]...entirely failed to consider an important aspect" of a rulemaking. Motor Vehicle Mfrs. Ass'n v. State Farm Mutual Auto Ins. Co., 463 U.S. 29, 43 (1983). Advocating reallocation of the 2 GHz band and migration of incumbent users to other bands, without full consideration of how these displaced users would operate, would be such an arbitrary and capricious failure to consider an important aspect of the reallocation issue. To avoid regulating in an arbitrary and capricious manner, the Commission must grant the Petition because it sets forth proposals which are sufficiently meritorious to warrant incorporation into a further rulemaking proceeding.

<sup>39</sup> Harris at 2.

<sup>40</sup> On March 31, 1992, UTC filed a Petition for Rule Making (RM-7981) ("UTC Petition") requesting deferral of action on the NPRM until the Commission proposes rules for fixed microwave user operation above 3 GHz. On April 10, 1992, AAR, LPPC and API collectively filed a Petition to Suspend Proceeding. On May 1, 1992, UTC filed a Petition for Issuance of Further Notice of Proposed Rulemaking requesting that the Commission initiate a detailed investigation of alternative frequency bands to accommodate emerging technologies.

The overwhelming consensus of parties to this proceeding supports the Commission taking the next step and instituting a formal rulemaking proceeding for comprehensive evaluation of ANS' proposals.<sup>41</sup> In fact, several parties express their intent to comment more extensively on ANS' proposals when the Commission institutes such a formal proceeding:

Due to the magnitude and complexity of the issues contained in the Petition insufficient time was available to fully and adequately examine the technical ramifications of the proposal. Furthering of this proceeding would allow for additional study of the complex issues involved.<sup>42</sup>

### **III. CONCERNS OVER ANS' PROPOSALS ARE UNJUSTIFIED**

ANS anticipated that certain parties would disagree with or suggest enhancements to elements of its proposal. It has not been disappointed. These concerns and suggestions are serious, useful and deserve further comment.

---

<sup>41</sup> Only Communications Transmission, Inc. ("CTI") supports wholesale denial of the Petition. As demonstrated in Section III, *infra*, and in Attachment 1, CTI's criticisms are not convincing. It should be noted that, in addition to the strong support for grant of the Petition, parties commenting on the NPRM and on the UTC Petition support institution of a rulemaking to address the displaced 2 GHz users. For example, NTIA urges the Commission to proceed with additional rule makings because:

[t]he [NPRM] currently lack[s] the level of precision needed to ensure that existing users can operate easily and efficiently in the higher frequency bands to which they relocate.

Comments of the National Telecommunications and Information Administration (ET Docket No. 92-9) at 16-17 (footnotes omitted). Similarly, Southwestern Bell Corporation is troubled by the fact that "the Commission simply does not have enough data at this time to fully evaluate the technical feasibility of such relocation and a more detailed factual investigation is both warranted and required." Comments of Southwestern Bell Corporation (ET Docket No. 92-9) at 8. See also ANS' Reply Comments on the NPRM at 29-30 for a complete roster of parties sharing this concern.

<sup>42</sup> Comsearch at 5. See also Centel at 4 n.5; AAR at 4 n.3; LPPC at 4 n.3.

**A. VARIOUS PARTIES MAKE SUGGESTIONS AND RAISE CONCERNS THAT REQUIRE FURTHER CONSIDERATION IN A FORMAL RULEMAKING**

**HARRIS** -- In its comments, Harris suggests several useful enhancements to ANS' plan for displaced 2 GHz users operating in the bands above 3 GHz. These suggestions are worthy of further consideration by the Commission in a formal rulemaking proceeding.

Except as noted below, ANS agrees with the following proposals made by Harris:

- All channelization plans for the bands above 3 GHz should be codified in the Commission's Rules.<sup>43</sup>
- All existing 4 GHz satellite licensees should be relocated, on a gradual basis, to higher bands (i.e., 11.7 to 12.2 GHz and 12.2 to 12.7 GHz depending on whether DBS is implemented).<sup>44</sup>
- The Commission's Rules must be sufficiently flexible to provide for "splinter" channels created when new channels are overlaid on existing channels (i.e., isolated narrow bandwidth channels and broken channel pairs). System planners and coordinators must be able to use a transmit channel from one pair and a return channel from another pair if circumstances dictate. The Commission's rules also should be specific as to the assignment policies governing the use of "splinter" channels.<sup>45</sup>
- Protection of growth channels in the frequency coordination process should be formalized. The current informal, ad hoc process for protecting growth channels should be disbanded.<sup>46</sup>

---

<sup>43</sup> Harris at 7.

<sup>44</sup> Harris at 7.

<sup>45</sup> Harris at 8.

<sup>46</sup> Harris at 9. Harris also recommends relying upon such technologies as cross-polarization cancellation to resolve the growth channel issue. Id. ANS agrees that such technologies show promise and urges the Commission to consider their usefulness in the rulemaking resulting from grant of the Petition.

- **Spectral efficiency limits should be implemented through a phased approach.<sup>47</sup> However, consideration still must be given to ensuring that system gain requirements for path lengths at the lower frequency bands provide for multipath fading and rain outages.**
- **The flexibility gained from the channel stacking proposals made by ANS should be better defined. In addition to revising Section 21.122, as proposed by ANS, channel stacking provisions should be incorporated into Part 94.<sup>48</sup>**
- **ATPC should be formally incorporated into Part 94 of the Commission's Rules.<sup>49</sup>**
- **More appropriate power mask rules should be established, allowing manufacturers to design more cost-effective radios which provide longer and more reliable path lengths at higher frequencies without causing additional out-of-band interference.<sup>50</sup>**

**ANS also has concerns regarding certain other Harris proposals. These concerns need to be addressed in a formal rulemaking.**

**Harris recommends deferring action on the Petition in favor of establishing an industry advisory committee consisting of user, manufacturer and government representatives.<sup>51</sup> This committee would be formed for the purpose of establishing an**

---

<sup>47</sup> Harris at 10-11.

<sup>48</sup> Harris at 12.

<sup>49</sup> Harris at 12-13. Harris questions ANS' assertion that the use of ATPC currently is permitted under Part 21. *Id.* at 13. ANS stands by its assertion because numerous vendors provide radios licensed by the Commission under Part 21 for ATPC use.

<sup>50</sup> Harris at 13-14.

<sup>51</sup> Harris at 2-3.

industry consensus on technical standards and other rules to govern the future use of the bands in question.<sup>52</sup>

ANS opposes deferring action on its Petition at this time. To evaluate the cost/benefit calculus of the proposed 2 GHz band clearing, the Commission must concurrently consider the proposals raised in the Petition.<sup>53</sup> Reliance on an industry committee could inhibit this process instead of facilitating it, as Harris claims, because not all interested parties would be able to participate. It is clear from the comments filed on the Petition that numerous parties intend "fly specking" ANS' proposal. Establishing an industry committee at this time could censor such useful and necessary analysis. Once a full record is developed in a formal rulemaking proceeding that incorporates proposals made by ANS and other parties for how the 2 GHz users would operate in the higher bands, the Commission will be in a better position to consider the merits of establishing such an industry advisory committee.

Harris opposes reallocating the upper 6 GHz band for co-primary sharing and proposes leaving it allocated for private op-fixed use only.<sup>54</sup> ANS does not agree with this approach. It would deny common carriers access to necessary spectrum in the bands above 3 GHz. In the alternative, Harris proposes reallocating the band available under Part

---

<sup>52</sup> Harris at 3.

<sup>53</sup> Proponents of the emerging technologies reallocation caution the Commission that grant of the Petition should not delay introduction of new services. APC at 2; Comments of Spatial Communications, Inc. at 2. ANS shares these concerns. Grant of the Petition and resolution of the issues addressed therein will expedite, rather than delay, introduction of new technologies.

<sup>54</sup> Harris at 5.

74 to permit co-primary use.<sup>55</sup> Although there would be a limited amount of spectrum available on this band, ANS supports further consideration of Harris' proposed Part 74 reallocation.

Harris states that "it is not clear how the expansion of such existing systems would be treated" under ANS' proposed rechannelization plan.<sup>56</sup> Harris believes that such existing systems should be allowed to expand under current channelization plans without waiver.<sup>57</sup> ANS did not address expansion of existing systems licensed under old channelization plans in its proposal. It agrees with Harris that this issue needs to be explored further.<sup>58</sup>

**PACIFIC TELESIS** -- Pacific Telesis "is in complete agreement with the fundamental premise of the Petition...."<sup>59</sup> Nevertheless, Pacific Telesis registers "serious reservations about allowing private users into the common carrier bands--particularly the 6 and 11 GHz common carrier bands."<sup>60</sup>

Given the unavailability of the 4 GHz band under current rules because of potential interference to earth stations, Pacific Telesis is concerned that spectrum made available in the upper 6 GHz band, allocated currently for private op-fixed use, is narrowband

---

<sup>55</sup> Harris at 5.

<sup>56</sup> Harris at 8.

<sup>57</sup> Harris at 8.

<sup>58</sup> Other parties raise the same question regarding treatment of existing users. Comsearch at 3; NSMA at 3. Comsearch concurs that "additional study is warranted to determine the full effect of introducing new channel plans into the existing environment." Comsearch at 3.

<sup>59</sup> Pacific Telesis at 1.

<sup>60</sup> Pacific Telesis at 2.

channelized and therefore would not serve the wideband needs of common carriers.<sup>61</sup> Pacific Telesis claims that the common carrier's need is "principally for broadband (multi-DS3) capacity" and that ANS incorrectly "asserts that multi-channel, high capacity radio routes are mostly a thing of the past and that multiple DS3 high capacity frequency slots are seldom required."<sup>62</sup>

Pacific Telesis also disagrees with ANS' proposal to sub-divide each 30 MHz channel into three 10 MHz channels for one x DS3 radios. Pacific Telesis argues that this proposal is not spectrally efficient, that it will inhibit common carriers from increasing their system capacity, and that it will encourage carriers to overstate their channel loading.<sup>63</sup>

Such concerns are unwarranted. ANS designed its proposed rechannelization plan to accommodate the wideband system requirements of common carriers. Nothing in ANS' proposal precludes Pacific Telesis or any other common carrier from aggregating sufficient bandwidth to satisfy these needs. Thus, under ANS' proposal, wideband (30 MHz) channels still would be available for common carriers.<sup>64</sup>

---

<sup>61</sup> Pacific Telesis at 2. See also MCI at 6.

<sup>62</sup> Pacific Telesis at 2-3 (citation omitted).

<sup>63</sup> Pacific Telesis at 3-4.

<sup>64</sup> NSMA recommends that "the rules should specify a plan which would ensure that as few wideband channels as possible are used to support narrowband systems in any geographic area." NSMA at 2. If adequate spectrum in the higher bands would be available under the existing channelization scheme, ANS would concur with NSMA's recommendation. Nevertheless, the flexibility built into the ANS channelization plan meets NSMA's criteria.

Moreover, while ANS is sensitive to common carriers' multiple DS3 requirements, this proposal was not made in a vacuum. Comprehensive market data show a current low level of demand for multiple DS3 high capacity frequency slots.<sup>65</sup>

UTC -- UTC supports grant of the Petition.<sup>66</sup> However, UTC expresses concern that adoption of ANS' interference standards might degrade private op-fixed operations.<sup>67</sup> ANS proposes that the Commission amend its rules to apply the Part 21 common carrier frequency coordination standards to both common carrier and private op-fixed users migrating into the bands above 3 GHz.<sup>68</sup> UTC instead proposes that existing coordination rules for each microwave band remain in place.<sup>69</sup>

UTC's concern is unjustified. The Part 21 frequency coordination standards that would be applied to private op-fixed users are more stringent than the equivalent private carrier frequency coordination standards. These common carrier standards are based upon AT&T's long-distance criteria, which were designed to provide the same quality of service for long-distance and local traffic.

UTC also is concerned that ANS' proposal is biased towards digital technology.<sup>70</sup> ANS concedes that its proposal is grounded upon the fact that virtually all new microwave

---

<sup>65</sup> As a major supplier of point-to-point microwave equipment in North America, ANS' market data show that the vast majority of current microwave radio sales are for low to medium non-multichannel digital radios. However, ANS' channelization plan still protects wideband channels from low density use.

<sup>66</sup> UTC at 1-3.

<sup>67</sup> UTC at 4.

<sup>68</sup> Petition, Attachment 1 at Section 4.8.

<sup>69</sup> UTC at 4-5.

<sup>70</sup> UTC at 5-6.



radio equipment being sold today is digital. However, ANS is equally concerned that all new standards protect the integrity of analog transmissions. Thus, ANS agrees with UTC's request that "the impact on the use of analog microwave equipment should be explicitly addressed"<sup>71</sup> in the rulemaking adopted upon grant of the Petition.

**CTI** -- Of all the parties filing comments in this proceeding, only CTI completely opposes further evaluation of ANS' proposals in a formal rulemaking. The bases for CTI's opposition are unsupportable and should be rejected.

In general, CTI opposes grant of the Petition because ANS' proposals: (1) are premature; and (2) would affect fixed point-to-point microwave user operations adversely:

First, even in its best light, the ANS petition is premature. ANS proposes present rule changes to overcome problems that a licensee of a 2 GHz microwave station may never face during the ten year time frame that the FCC proposes the modification of these 2 GHz stations to higher frequencies is to take place.

\*\*\*\*\*

[T]he ANS proposal would not promote the public interest because the proposal would so subchannelize spectrum as to greatly limit the ability of common carriers, such as CTI, to expand their capacity to meet immediate customer needs and simultaneously it would vastly increase the risk that a degrading level of interference would be caused to already licensed microwave stations....<sup>72</sup>

CTI misses the point. As a threshold matter, to fully evaluate whether the proposed 2 GHz exodus should take place at all, the Commission must determine whether these users

---

<sup>71</sup> UTC at 5-6.

<sup>72</sup> Statement In Opposition to Petition for Rulemaking by CTI at 1-2.